

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT												
NATURE OF CONVEYANCE:	EXECUTIVE ORDER 9424, CONFIRMATORY LICENSE												
CONVEYING PARTY DATA													
<table border="1"><tr><th>Name</th><th>Execution Date</th></tr><tr><td>The Pennsylvania State University</td><td>05/11/2010</td></tr></table>	Name	Execution Date	The Pennsylvania State University	05/11/2010									
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The Pennsylvania State University	05/11/2010												
RECEIVING PARTY DATA													
<table border="1"><tr><td>Name:</td><td>National Science Foundation</td></tr><tr><td>Street Address:</td><td>4201 Wilson Blvd</td></tr><tr><td>Internal Address:</td><td>Room 1265</td></tr><tr><td>City:</td><td>Arlington</td></tr><tr><td>State/Country:</td><td>VIRGINIA</td></tr><tr><td>Postal Code:</td><td>22230</td></tr></table>	Name:	National Science Foundation	Street Address:	4201 Wilson Blvd	Internal Address:	Room 1265	City:	Arlington	State/Country:	VIRGINIA	Postal Code:	22230	
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PROPERTY NUMBERS Total: 1													
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Application Number:	10043440												
CORRESPONDENCE DATA													
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Total Attachments: 1 source=37#page1.tif													

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PATENT
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LICENSE TO THE UNITED STATES GOVERNMENT

This instrument confirms to the United States Government, as represented by the National Science Foundation, a nonexclusive, nontransferable, irrevocable, royalty-free license to practice or have practiced on its behalf throughout the world the following subject invention:

Invention Title: Probing the Performance Limits of E. coli Metabolism with an Optimization Based Approach		
Inventor(s): C.D. Maranas, A.P. Burgard, V.S. Raman		
Patent Application Serial No.: 10/043,440 -7,771,490	Filing Date: 1/10/2002	Country (if other than U.S.): All Countries
NSF Grant No.: CTS9701771		PSU Disclosure No.: 2001-2411

This license will extend to all divisions or continuations of the patent application and all patents or re-issues which may be granted thereon.

The subject invention was made with Government support under Grant No. CTS9701771, awarded by the National Science Foundation.

Principal rights to this subject invention have been left with the Assignee: The Penn State Research Foundation, subject to the provisions of the Patent Rights clause included in the above identified contract with National Science Foundation.

SIGNATURE and TITLE OF ASSIGNEE:

By:  Date: May 11, 2010

Name: Ronald J. Huss Title: Director, Intellectual Property Off.
(printed) (printed)

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